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a proposal to develop a

COMPREHENSIVE COMMUNITY ENERGY MANAGEMENT PROGRAM

FOR BOSTON



Prepared in response to RFP 78-4229 from Argonne National Laboratory  
by the Boston Redevelopment Authority on behalf of the City of Boston

Kevin H. White, Mayor  
City of Boston

Robert F. Walsh, Director  
Boston Redevelopment Authority

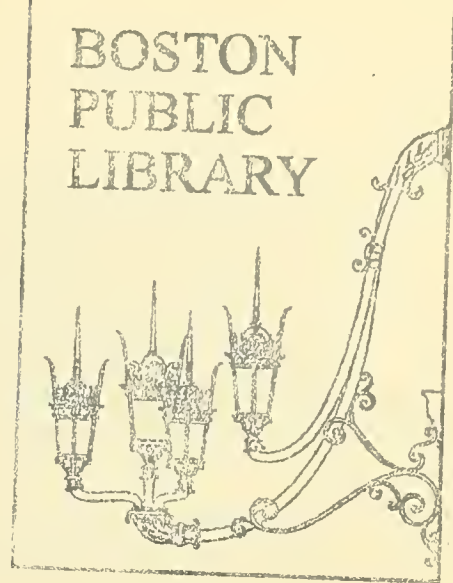
June 14, 1978



# Boston Redevelopment Authority

Robert F. Walsh, Director

Mr. Robert P. Houghton  
Subcontract Administrator  
Argonne National Laboratories  
9700 S. Cass Avenue  
Argonne, Illinois 60439



Dear Mr. Houghton:

Few cities in the United States suffer the consequences of high energy costs as much as Boston. A combination of factors, including the cold climate and aging housing stock, results in a high consumption of fuel for space heating. Boston's location on the northeastern tip of the country adds a high fuel penalty to goods transported into and out of the city. Historically we are more dependent on imported oil -- the fuel which has risen fastest in price -- than the rest of the country.

The sum of all these factors is that the people of Boston pay more to stay warm, to travel, and for the food and products they need. They pay more for the fuel they consume, again for the fuel costs of stores and industries, and yet again for the fuel used by government and utilities.

Since there is virtually no fuel produced in or around Boston, most of this money leaves the region and does little or nothing to support the local economy.

And, finally, the high cost of energy contributes directly to the high cost of manufacturing. Thus, it discourages the very manufacturing development that could assist local residents in paying their energy bill. Existing firms, faced with competition from areas with lower energy needs and costs, must continually re-evaluate their decision to stay in Boston.

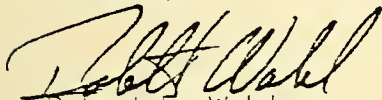
As the above analysis suggests, Boston's most important energy goal is to lessen the burden of high energy costs. This can be dealt with in two ways; lowering the cost of producing and distributing energy, or reducing the amount of energy consumed. Of these two possible courses of action, it is clear that local governmental units are more likely to have success in dealing with the latter than the former. While there is some room for increased efficiency in energy production of electricity, Boston can expect to have little or no effect on the basic energy prices, which, in any case, are expected to rise rather than decline.



Although energy planning was unheard of before the oil boycott, Boston's needs are now so great that it has undertaken a variety of energy conservation programs with little or no outside support. Our efforts to conserve energy consumed by the City government have resulted in the savings of over \$250,000 annually. Other efforts have encouraged homeowners to insulate their houses and to otherwise make their heating equipment more efficient. Boston is also the site of one of the first solar heated schools buildings in the country. However, these methods for marginally cutting energy demand are not sufficient to solve our problem. Coordinated public and private plans are necessary.

Boston thus looks to the process and funding of the Comprehensive Community Energy Management Program to give it an opportunity to analyze energy consumption within the City, to investigate alternative ways of reducing energy use and to develop ways of putting the resulting management program into effective action.

Sincerely,

A handwritten signature in dark ink, appearing to read "Robert F. Walsh", written in a cursive style.

Robert F. Walsh  
Director





KEVIN H. WHITE  
MAYOR

CITY OF BOSTON  
OFFICE OF THE MAYOR  
CITY HALL, BOSTON

RECEIVED

MAY 24 1978

Mr. Robert F. Walsh, Director  
Boston Redevelopment Authority  
City Hall  
Boston, Massachusetts 02201

BOSTON REDEVELOPMENT AUTHORITY  
OFFICE OF THE DIRECTOR

Dear Mr. Walsh:

As you well know, energy costs in Boston are substantially higher than the rest of the country for reasons over which we have no control. This causes substantial negative impacts on our community. We are at a disadvantage in attracting new business and industry and retaining those here now. Home heating costs have risen so extensively in the past several years that significant portions of our city can no longer afford decent housing as a result. Several City departments have had to cut back their budgets in some areas in order to cover their continually rising energy costs.

One productive way of dealing with this problem is to make more efficient use of our energy resources. If community energy problems were dealt with within a comprehensive framework greater efficiencies and economies could result. The Department of Energy is initiating the Comprehensive Community Energy Management Program to aid a small number of communities in undertaking comprehensive analysis and resolution of their energy issues.

Energy conservation is one of our major community problems and therefore I am hereby asking the Boston Redevelopment Authority to submit a proposal to the Argonne National Laboratory for funds to undertake comprehensive energy planning in Boston. As the City's planning agency you have demonstrated much success in coordinating public and private planning efforts in the past. This capacity will serve the City well in obtaining these funds and successfully carrying out the project. I stand ready to participate in the project whenever it is appropriate.

Sincerely,

Kevin H. White  
Mayor





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CERTIFICATE OF VOTE

The undersigned hereby certifies as follows:

(1) That he is the duly qualified and acting <sup>Assistant</sup> Secretary of the Boston Redevelopment Authority, hereinafter called the Authority, and the keeper of the records, including the journal of proceedings of the Authority.

(2) That the following is a true and correct copy of a vote as finally adopted at a meeting of the Authority held on May 25, 1978 and duly recorded in this office:

Copies of a memorandum dated May 25, 1978, were distributed re Comprehensive Community Energy Management Program, attached to which were copies of a Resolution.

A Resolution entitled: "RESOLUTION OF THE BOSTON REDEVELOPMENT AUTHORITY REQUESTING FUNDS FROM THE FEDERAL DEPARTMENT OF ENERGY THROUGH THE ARGONNE NATIONAL LABORATORY FOR A COMPREHENSIVE COMMUNITY ENERGY MANAGEMENT PROGRAM" was introduced, read and considered.

On motion duly made and seconded, it was unanimously

VOTED: To adopt the Resolution as read and considered.

The aforementioned Resolution is filed in the Document Book of the Authority.

(3) That said meeting was duly convened and held in all respects in accordance with law, and to the extent required by law, due and proper notice of such meeting was given; that a legal quorum was present throughout the meeting, and a legally sufficient number of members of the Authority voted in a proper manner and all other requirements and proceedings under law incident to the proper adoption or the passage of said vote have been duly fulfilled, carried out and otherwise observed.

(4) That the RESOLUTION to which this certificate is attached is in substantially the form as that presented to said meeting.

(5) That if an impression of the seal has been affixed below, it constitutes the official seal of the Boston Redevelopment Authority and this certificate is hereby executed under such official seal.

(6) That ROBERT P. WALSH is the Assistant of this Authority.

(7) That the undersigned is duly authorized to execute this certificate.

IN WITNESS WHEREOF the undersigned has hereunto set his hand this 26th day of May, 19 78.

BOSTON REDEVELOPMENT AUTHORITY

LS

By Assistant Secretary



RESOLUTION OF THE BOSTON REDEVELOPMENT AUTHORITY REQUESTING FUNDS FROM  
THE FEDERAL DEPARTMENT OF ENERGY THROUGH THE ARGONNE NATIONAL LABORATORY  
FOR A COMPREHENSIVE COMMUNITY ENERGY MANAGEMENT PROGRAM

WHEREAS, energy costs in Boston are substantially above other parts of the country which results in a comparative economic disadvantage for our community; and

WHEREAS, the cost of energy has become a burdensome proportion of family housing costs; and

WHEREAS, the cost of energy to the City of Boston has increased severalfold in recent years causing additional tax burdens; and

WHEREAS, conventional energy resources are limited and are being rapidly depleted; and

WHEREAS, more efficient consumption of energy resources will help to ameliorate some of the problems associated with energy consumption; and

WHEREAS, comprehensive energy planning and management undertaken through the leadership of the Boston Redevelopment Authority would promote energy efficiency and have community-wide benefits; and

WHEREAS, the Boston Redevelopment Authority is Boston's city planning agency under State statutes; and

WHEREAS, the Mayor has requested the Boston Redevelopment Authority to seek funds to undertake a Comprehensive Community Energy Management Program; and

WHEREAS, the United States Department of Energy through the Argonne National Laboratory is making funds available to cities who are interested in establishing a Comprehensive Community Energy Management Program.

NOW, THEREFORE, BE IT RESOLVED as follows:

1. That the Board of the Boston Redevelopment Authority urges the Argonne National Laboratory to provide Boston adequate funds to undertake a Comprehensive Community Energy Management Program.
2. That the Board hereby expresses its desire to participate, as appropriate, in the development of Boston's energy action plan.
3. That the Director is hereby authorized to request funds from the Argonne National Laboratory.



SECTION 1  
PROGRAMMATIC CATEGORIES



## PROGRAMMATIC CATEGORIES

1. Prior or ongoing energy program

1a. Previous or ongoing energy program

2. Organizational structure to prepare CCEM

Staff task force representing all agencies involved in energy planning headed by Comprehensive Planning Director. Separate technical advisory and policy advisory committees composed of appropriate representatives of energy producers/distributors, consumers, regulatory and other relevant government agencies. Proposal will follow methodology with modifications to make it applicable for a large city with extensive data processing capability. Special emphasis on cost of energy to the local economy and potential savings available through conservation techniques.

3. Governmental Type

3a. City or Town

4. Governmental Form

4b. Mayor - Council

5.

5a. Home Rule

6. Regional Distribution

6a. N. E. Region I & II

7. Community Size

7c. 250,000 - 750,000





SECTION 2  
BRIEF SUMMARY



## 1. The Problem

Boston's energy problems result from the penalty high energy costs impose on living and working in this city. Fuel in Boston costs more than in the rest of the country, and we have to use more of it to survive. The only way a city can work to lessen this burden is to develop a plan that will reduce the amount of fuel consumed in all areas of city life.

There is a great deal of room for improving the efficiency of fuel use. Boston's buildings -- residential, commercial, and industrial -- are old and often poorly insulated. Local roads are narrow and congested. The rapid transit system is extensive, but it is old and often does not meet current travel needs. High energy costs have weakened the economy to the point where many homeowners and businessmen cannot afford the investment in energy saving techniques unless the payback is fast and high. The City itself is having trouble finding funds to update hundreds of its own buildings that were constructed when oil sold for under 15¢ a gallon.

A large number of groups and agencies that impact energy matters are located in Boston (see appendix 1). However, a lack of communication and coordinated planning has prevented sustained efforts to reduce energy costs. A Comprehensive Energy Planning effort will serve to coordinate action proposals and encourage optimal allocation of resources.

## 2. The Organization

Boston's CCEMP will be prepared as part of an ongoing comprehensive planning process. It will be coordinated with planning efforts in the areas of economic development, population, housing, and transportation. This process calls for public review through open meetings, distribution of draft documents and the utilization of experts from the community. Two committees will assist the energy planning staff. A technical committee will advise and work on data gathering, analysis, and the development of the work program. Its members will come from the research departments of the major utilities, major energy consumers, regulatory agencies, and consumer protection groups.

A policy advisory group will include high level decision makers from the above mentioned organizations, plus other governmental and financial interests. This group will be concerned primarily with development of policies and implementable programs.

### 3. The Plan

Boston proposes to follow the planning methodology as described in the RFP to the extent practicable. To make the methodology more manageable for a large city the audit information will be computerized. Statistical sampling techniques will reduce data costs and allow for a more detailed breakdown of land uses, fuel sources, and energy saving investments. The work will be undertaken by staff from the Boston Redevelopment Authority, the Mayor's Energy Office, and other City departments. Overall responsibility will rest with the Comprehensive Planning Department of the BRA.

### 4. Implementation

The planning process will result in a specific Action Plan that will become the policy of the City of Boston after approval by the Boston Redevelopment Authority Board and the Mayor. However, implementation of a comprehensive energy plan requires much more than unilateral City action. In this complex field, more will be achieved through information and cooperation than by force of law. For that reason attention will be given to the problem of implementation throughout the planning process as well as after final approval of the plan.

Implementation will depend on communication, coordination, information, and specific changes of laws and regulations. For example, the two committees of experts will assure that the decision makers involved in implementing the plan will have participated in its design. Likewise the public information process will involve the ultimate consumers of energy in the planning and decision making process. In the interest of creating an awareness of energy costs in the individual citizen, a special effort will be aimed at making information on energy consumption by common building types available to building owners. By comparing their fuel usage with that of similar buildings in Boston, the owners will be able to make their own energy plans.

SECTION 3  
COMMUNITY DESCRIPTION





Boston is one of our nation's oldest and most historic cities, and is known throughout the world for its educational, medical and cultural resources. After the recession in the early 1970's, there is every indication that the city has regained the confidence and vitality that are necessary for another era of rebuilding and civic improvement.

### Recent Development Activity

Boston's economy has changed significantly since 1959 in large part due to the city's extensive Urban Renewal Program. The \$200 million 52 story Prudential Center built in the early 1960's has been followed by the \$230 million Government Center complex, the \$70 million Christian Science Church Center, the highly successful Faneuil Hall Marketplace restoration and redevelopment of the waterfront.

The successful redevelopment of the downtown as a major office and shopping center has spurred the "back-to-the-city" movement, attracting larger numbers of young professionals back into Boston to live. To reinforce this trend, hundreds of million of dollars in city's, federal, and private funds have been targeted for neighborhood renovation. In addition, the innovative Boston Plan coordinates Federal programs and private investment to assist the rehabilitation of four targeted neighborhoods.

But Boston is not without its problems. Although it has weathered the economic storms of the late 1960's-early 1970's, a combination of low incomes and high prices has effectively made Boston one of the poorest cities in the nation. The rising cost of energy, (26% higher than for the rest of the nation) and harsh winters have been instrumental in weakening Boston's economic picture. High energy costs severely strain the incomes of those who can least afford the increases - the poor and the elderly groups which form a significant percentage of Boston's population have suffered the most.

An active energy management program would be an important step toward reducing some of these hardships. Conservation measures would reduce energy costs for city businesses, encouraging old firms to stay and new ones to enter. This will serve to expand employment and increase the city's tax base. Although not a remedy for poverty, the energy conservation program will ease strained incomes by saving Boston homeowners and tenants thousands of dollars annually. If an efficient management system for city facilities is developed million of city dollars would be saved, easing tax pressures. Most of these dollars come from the local property tax. Finally, energy management and conservation will free up funds for the rehabilitation and maintenance of a severely aging housing stock. Improved housing through energy saving would increase confidence in neighborhoods, anchor localized commercial development and expand the city's tax base. Tax pressures are enormous in Boston due to the large percentage of tax-exempt property and the dependence by the city on the property tax for 70% of local revenue (40% average for the nation's largest cities).

In summary, the City of Boston stands to benefit greatly from an energy management and planning program. The diversity of its neigh-

borhoods, its strong public transportation system, the available pool of energy expertise in local universities, and the fact that Boston is a place to live as well as to work make the City of Boston an attractive test for the methodology developed by the Department of Energy.

## 1. Age & Form of Government & Planning

Boston was first settled in 1630 and incorporated as a city in 1822. The Mayor is the chief executive officer of the City; a nine-member City Council is the legislative body and a five-member School Committee has general charge of the public schools. By State statute the Boston Redevelopment Authority is the City's agency responsible for planning and development. The BRA currently operates an extensive planning and development program involving the residential, commercial, industrial, transportation and public sectors of the city. The Authority is governed by a board which is made up of four appointees of the Mayor and one of the Governor. It has a staff of 275 with a wide range of professional skills and an annual budget of \$20 million.

### Population

The City of Boston's population, estimated in 1975 to be 636,725, has stabilized and shown modest gains in recent years after two decades of decline. Although it is the 23rd largest city in the U.S., Boston serves as a regional center, place of employment, etc. to the 6th largest S.M.S.A., an imbalance far greater than any other large U.S. city. As a consequence, Boston's population must bear the burden of paying for city services used by a metropolitan community five times its size.

### Income

Based on 1970 census data, median family income in Boston was \$9,133, placing the city 14th among the 20 largest cities. Of the country's 25 largest cities in 1976, Boston carried the third highest consumer price index. This combination of low income and high prices makes Boston one of the poorest cities in the country.

### Housing

The age of the city's neighborhoods is most evident in the housing stock. Of 237,000 dwelling units, 3/4 were built before 1940. More than 60% of the city's housing stock is in structures containing one to four units, and almost 80% of these structures have owner occupants.

### Employment

From the 1930's through the late 1950's, Boston experienced a substantial decline in total employment, particularly in the manufacturing and trade sectors. Since then, the economy has shifted toward the areas of service, government, and finance. In 1975, Boston provided 538,500 jobs: 147,500 in service industries including

the medical, business and educational fields; 90,200 in government; 75,900 in finance, insurance, and real estate; 51,400 in manufacturing; and 41,300 in transportation. Boston accounts for one third of the employment in the metropolitan area and one out of each five jobs in the State of Massachusetts.

### Economy

Boston's strength lies in its pivotal role for the economy of the metropolitan region and the state. It is a center for cultural, medical and educational services as well as for finance and government.

The City has a number of major museums, hospitals, colleges, universities, and institutions for higher education. It is the seat of government for the region, the State and the New England area. In Government Center alone, there are over 22,000 Federal, State and local government employees. Boston is also the second largest financial center in the country, managing over 80 billion dollars of investors' money.

However, Boston is not overly specialized in services. Its manufacturing sector comprises fully 10 percent of the City's employment. Expansion is planned in the shipping and computer equipment industries, among others. By complementing the strong printing, apparel and food industries, these growing industries will ensure a broad range of job opportunities for residents of Boston.

The largest manufacturing industries are printing and publishing, apparel, food products and fabricated metals.

### Transportation

Boston is also a major transportation center. It has the world's eighth busiest airport, is the regional core for New England's rail, truck and bus routes, and is its leading port. The Boston public transportation system links 2.8 million people to the downtown via 80 miles of rapid transit, 291 miles of commuter rail, and 3,500 miles of bus routes.



SECTION 4  
HISTORY OF ENERGY PLANNING





Before 1973 there was little community interest in energy management. But the oil embargo and resulting price increases affected Boston much more than other parts of the country. Between 1971 and 1974, energy costs in New England increased 145% while the average increase nationwide was 58% according to a Federal Energy Administration report. Since then federal, state, and local organizations have begun both long and short range energy programs in Boston. Appendix #1 is a list of these organizations and their activities.

The City responded to the energy crisis in three different ways: land use controls, municipal energy management, and residential conservation.

### Land Use Controls

At the broadest scale, the Boston Redevelopment Authority began a study of the impact of zoning and Planned Development Area Regulations on the energy efficiency of new developments. This study, still in an early phase, will consider changes in the zoning code that will allow for increased densities, especially in the vicinity of transit stops. Also under consideration are bonuses allowing higher densities in Planned Development Areas where the developer takes steps to reduce energy consumption for space heating and cooling (through design, landscaping, solar equipment, etc.) and for transportation. In addition to raising densities these proposals would encourage mixing land use to reduce travel necessary for shopping and work trips.

### Municipal Energy Management

Several programs are underway to cut the City's own energy costs. The Boston Energy Office directs conservation programs which include energy audits of City buildings, revised a City purchase policy, a vehicle allocation policy, a computerized monitoring system for municipal energy consumption, and a shared savings incentive program. In the past year, the City saved over \$250 thousand in energy expenditures as a result of these programs.

To ensure that HVAC systems in City buildings operate as efficiently as possible, the Boston Public Facilities Department plans to expand its computer controls to systems in over sixty City-owned buildings. The department's fulltime energy conservation engineer is supervising this project. The Grover Cleveland School Annex, one of the few school buildings in the country equipped with solar collectors for heating, was constructed by the Public Facilities Department in 1973.

### Residential Conservation

To help Boston homeowners lower their heating costs the City expanded its Housing Improvement Program. Under the HIP, a housing specialist from a neighborhood site office determines the home's potential energy savings, and writes the specifications and prepares cost estimates for



needed improvements. When the work is completed the homeowner receives a rebate ranging from 20% to 50% of the value of the improvements.

### Design of New Development Projects

The City is currently working on several development projects that lend themselves particularly well to efficient and innovative energy production and distribution systems. The former Charlestown Naval Shipyard will have 1,100 new residential units plus commercial and institutional uses developed on an 87 acre site. An extensive network of underground utility tunnels that formerly served the ship repair activities can serve as the basis for developing an integrated energy system.

A similar situation exists in the former South Boston Naval annex except that this site is being developed for industrial uses. Both sites are owned by the City of Boston, the former through the BRA and the latter Boston's Economic Development Industrial Commission (EDIC).

In addition, planning is underway for the private redevelopment of over 300 acres of vacant land and underutilized warehouses in the City's Fort Point Channel Area. This plan which calls for an investment of over \$300 million in hotels, offices, and apartments will provide another opportunity for innovative energy production and reuse proposals.

Columbia Point, one of the last large concentrations of high rise public housing units has been a source of concern to the City administration and the Federal Government alike for many years. Dramatic new developments on the peninsula adjoining the 1,500 units of public housing, including the 10,500 student University of Massachusetts campus and the John F. Kennedy Presidential Library, have created a climate for new housing and for the rehabilitation of the public housing units. New commercial and other job producing activities are also proposed for this site. The high density of development, the large number of new housing units to be built over a short period of time, and the lack of existing infrastructure suggest that innovative energy technologies could be employed in this project.

## SECTION 5

### PROBLEMS, APPROACHES, AND ORGANIZATION



## 5A. General Problems

The RFP and the consultant studies correctly identify implementation as the most important aspect of the energy planning process. The problem is to reach agreement on a wide range of appropriate actions (as a result of the energy planning process) and to get the numerous individuals, groups, organizations, political units, and other actors, each with their own objectives, procedures, constraints, and pre-existing ideas, to jointly put these activities into action. The process is made even more difficult because many of the actions require capital expenditure and other long term commitments.

The CCEMP process will lead to a formal plan that will be incorporated into the City's new Comprehensive Plan after approval by the Board of the Boston Redevelopment Authority and the Mayor. However, making the Energy Plan an official statement of Boston's policies is only one step toward achievement of the City's energy goals. The groundwork for implementation will be built directly into the planning process itself.

### 1. Coordination of City Departments

The first and most immediate challenge of Boston is to coordinate the various City agencies and departments. Administrative reform requires planning, time and careful monitoring. There is much the City can and must do in the area of energy management, and Boston has in recent years made noteworthy progress toward unifying its own agencies behind emerging energy concerns. As discussed elsewhere in this proposal, the 'no-cost' and 'low-cost' energy-saving measures, promoted by the Mayor's energy staff and adopted by virtually every department, were an important first step.

The City is presently beginning to develop plans for a special capital improvement program to reduce and control energy consumption in its school buildings and, eventually, all of its principal facilities. (A CCEMP comprehensive data base and analytic approach would help in determining the economic feasibility of these plans). The City is also developing an effective internal organization for energy management.

### 2. Coordination Among Groups

The second problem is to create a climate of cooperation among the City, other public agencies, and private groups.

No meaningful energy planning can take place without recognizing the roles of institutions over which the City has little control: the energy suppliers, distributors, regulatory agencies, and public interest groups. Energy planning is difficult to implement, both in-house and out, due to the inherent complexity of the issues. With so many interests at play, there is no way to guarantee a consensus on energy issues, even at the local level. But the City does have the resources - technical expertise, experience and political strength - with which to organize a forum for raising and addressing energy issues of mutual concern.

The City, often through its Redevelopment Authority, has had the experience of working with diverse groups towards a common goal. For example, HUD's Urban Development Action Grant (UDAG) projects (Fort Point Channel, Boston Marine Industrial Park, Charlestown Naval Yard) have involved the cooperative efforts of outside organizations and interest groups in their development. The Boston Plan is another example of a large planning program that draws upon public and private opinion.

In 1976-77, the Comprehensive Planning Department (which will be responsible for CCEMP) worked with a citizen committee and a staff task force to produce a Growth Policy Statement for the City of Boston. Substantial portions of this statement were later included in the State's report on Growth Policies for urban development. A similar community planning effort is currently underway as part of the Fort Point Channel Planning effort. Comprehensive Planning is running a series of monthly meetings where developers, residents and staff people work out current and projected problems in this area which will be the site of a series of major new developments and transportation improvements.

The City has already begun talking to the outside institutions whose energy activities, have an impact on the entire community. The CCEMP offers the City an opportunity to engage these institutions in a more formal and rigorous manner. The CCEMP effort will use two advisory groups made up of technical experts and high level decision makers in organizations dealing with energy. The make up of these groups and their specific functions are described in Section 5C below. In addition to these functions, the groups will serve to open communication and create consensus. To increase the involvement of the participants, as well as to make use of their expertise, they will be asked to participate directly in the analysis and interpretation of information and in the development of alternatives.

CCEMP will not be a private process. In accordance with the overall framework for comprehensive planning in Boston, draft reports will be distributed for public review and comments. Energy forums and workshops will be held to inform the public and solicit their input. In addition special briefings will be held for the press.



## 5B. Boston's Approach to Comprehensive Community Energy Management

The approach to the CCEMP by the City will reflect the City's general and specific problems regarding energy management, the economic implications of the region's energy position and the institutional difficulties involved in implementation. Our approach will utilize the methodology to the greatest extent possible by tapping the resources available to the City and its energy suppliers. These resources include the City's own staff and funding (including the CETA manpower pool) and the consultation and advice of other public and private sector groups.

Boston has three specific energy goals: First, is to reduce the energy consumed by the City government itself. Through conservation on the municipal level the City will be able to maintain essential services and reduce costs. The results of the City's experience will be used to promote conservation to the community at large. Thus the impact of rising energy costs on taxes paid by business and citizens will be lessened and practical experience will be obtained on cost reduction techniques.

The second goal is to provide for alternative energy sources to augment existing supply and to cover potential shortages. This would have the added benefit of spurring industrial activity and economic development.

The third goal is to assure that all new development will be designed for energy efficiency from the ground up.

The following is a list of more specific approaches (not necessarily inclusive) that the CCEMP will aid in implementation:

1. Municipal energy management. To reduce energy waste in City operations and to improve the efficiency of the City's physical plant.
2. Housing. To make the City's housing stock more energy efficient.
3. Land use planning. To encourage efficient development patterns with high density dwelling units and reduced transportation needs.
4. Transportation. To reduce the energy used for transportation by encouraging a shift to more efficient modes of travel, e.g., car pooling and mass transit.
5. Welfare. To aid low-income families in coping with high energy prices.
6. Local economy. To revitalize the urban economy by attracting business and creating new employment opportunities.

7. Industrial & Commercial. To determine appropriate industries from high energy cost area. To make buildings and processes more efficient users of energy.
8. Education. To encourage conservation.
9. Health and environment. To maintain a clean environment and to ensure an adequate energy supply.
10. Resource development. To encourage and promote the development and production of indigenous and renewable energy sources.



## 5C. Organization to Prepare CCEMP Action Plan

Although final details of non-staff participation in the planning project will be fully developed in Stage 1, we are currently planning to have two outside advisory groups. One would be a technical advisory group which would consist of "hands on" people from the research departments of the major energy producers, consumers, and regulators. This group would review the technical aspects of the energy audit and alternative analysis. They would assure that the data was handled in an appropriate, secure, and efficient manner. It is expected that this group would meet more frequently early in the process and that its members would participate in the CCEMP effort rather than just criticize the staff work. It is extremely important to our proposal to have direct and regular input from people familiar with utility data and its problems.

The second group would be a policy advisory group. It would consist of decision makers or their personal representatives. This group would include the Mayor's housing and transportation advisors, the Director of the BRA, and the head of the Public Facilities Department. Other government agencies represented would include the New England Regional Commission, Massachusetts Energy Policy Office the Regional Planning Agency, the Massachusetts Port Authority, and the Department of Public Utilities. Utilities would be represented by the appropriate vice president. Major consumer groups would also be represented, including groups that represent large consumers of energy (such as the universities, manufacturers, stores, etc.) and those that represent large groups of residential users and other small scale consumers.

Also on this advisory committee will be representatives of design professionals specializing in energy conservation and of manufacturers and installers of energy saving products.

Responsibility of staff effort will rest on the Director of Comprehensive Planning in the BRA. The director is responsible for overseeing all city-wide planning efforts as well as advanced planning for new development projects. In addition, the director represents the BRA in the Coastal Zone Management Process and on the Comprehensive Planning Advisory Group of the Metropolitan Area Planning Council, the regional planning agency for Boston and vicinity.

Location of the ultimate responsibility at this level will assure appropriate coordination with all city and regional planning efforts.

Day to day staff activity will be the responsibility of the project director who will report to the head of Comprehensive Planning. The actual staff involved will include a wide range of disciplines from a variety of BRA and City departments concerned with planning, energy, research, environmental protection and community relations. All staff with major involvement in Boston's ongoing energy conservation and planning efforts will also be members of the CCEMP staff assuring coordination between the planning process and ongoing energy related efforts.

of disciplines from a variety of BRA and City departments concerned with planning, energy, research, environmental protection and community relations. All staff with major involvement in Boston's ongoing energy conservation and planning efforts will also be members of the CCEMP staff assuring coordination between the planning process and ongoing energy related efforts.

SECTION 6  
TECHNICAL PROPOSAL



After reviewing the scope of services provided in the RFP and the examples of the methodology provided in attachment Number 9, the energy planning team for the City of Boston decided to attempt to utilize the proposed methodology to the extent possible. While recognizing that the structure created by the consultants was designed for a much smaller community than Boston, it was decided that the methodology could be modified as necessary to meet the requirements and constraints of a large city. These modifications would enable us to use to the fullest the existing data, research capability, and computer systems, not only of the City of Boston, but of our major utilities, regulatory agencies, and other interested parties.

The reasoning behind this is two-fold. From the City's point of view, following the methodology as described will enable us to amass a data base that will be a tremendous aid in making specific decisions on alternative energy related policies at a later date. And, from the point of view of Argonne and DOE we will be able to evaluate the methodology in a special and very important case, that of the large city with advanced planning and research capacities.

While at this point it is not possible to foresee exactly where and how the methodology would have to be modified, the following changes seem appropriate in preparing the energy audit.

1. The first step would be to catalogue existing data and to begin negotiations with the data sources to obtain use of this data. This procedure will require considerable effort as the utility companies (which have a great deal of data on computer tapes) are obligated to protect the privacy of their subscribers as well as some information relating to their operations.
2. The second step will be to evaluate the three volume methodology to determine what information is required to provide the most accurate energy audit. As part of this review, specific changes to the methodology will be evaluated and discussed with the advisory groups and Argonne.
3. Strategies for collecting information not already available and necessary for the energy audits will be developed.
4. The constraint of available funds will then determine which part of the methodology will be completed in a detailed form and which will be handled using estimates and rules of thumb.
5. The sample of the methodology provided in the RFP does not provide enough information on the sections dealing with transportation related fuel expenditure to evaluate whether that section can be handled in the manner we propose.

The technical advisory committee (see Section 5) will assist the staff in all of these efforts.

The energy audit and alternative analysis is only one part of the program. The other part is implementing the plan - bringing about the changes



that will result in energy being saved. Some of these changes can be made by municipal action while others require cooperation and action from persons and agencies outside the jurisdiction of the City.

Implementation techniques include:

1. Cost Analysis - Real information on the dollar savings available through energy conservation will lead to appropriate investment in energy savings programs.
2. Communication and Coordination - Opening communication channels is an important implementation technique. Decision makers and technical people will sit down and talk out problems. This is particularly appropriate to energy providers, regulatory agencies and major consumers. It is important that representatives of the smaller consumers also are involved in the process.
3. Public Information - Significant energy savings can be brought about by making people aware of (and reminding them of) no- and low-cost energy savings steps.
4. Individual Energy Analysis

As part of the energy audit, we will collect information on energy consumption and costs for representative samples of the pre-dominant residential and commercial building types in Boston. These samples will further be broken down by amount of insulation and other energy saving features. Owners of similar structures will be able to use this information to make reasonable estimates of the savings available to them from energy conservation techniques. Our current plans call for a computer terminal to be located in a public area of City Hall. Building owners would be able to describe their building in response to a series of questions appearing on the computer screen. The computer would then provide information on the average energy consumption for similar structures in the City, the range of consumption, and the most efficient ways of reducing energy costs. Other terminals could be transported to energy seminars, home shows, etc. in order to make this information available as widely as possible.

5. Removal of Legal Barriers - Most energy saving technology is new, and much of it involves structural changes to buildings. These changes often do not conform with the existing building and zoning codes. Parts of the present building and zoning codes discourage energy conservation. Modification to codes and special provisions that allow for testing of new techniques can remove the problems.

In addition to the above-mentioned changes, Boston would differ from the proposed methodology for the following reasons and in the following manners.

### Reason #1-When Energy Conservation Activity is Underway or is Currently Planned

Due to the severe impact high energy costs have already had on the City, its residents, and businesses, Boston is currently involved in a variety of programs designed to help conserve energy in both public and private buildings. These efforts, described in Section 4 of this submission, include energy consumption monitoring, upgrading of insulation and heating plants, review of zoning and planned development area regulations etc. Except in cases where a direct conflict is apparent, Boston will continue to pursue these programs already underway in order to receive maximum return from their results and to maintain a momentum in programs that promote energy awareness.

In the case of all these ongoing programs, the staff directly responsible for implementation will also be involved in the Comprehensive Community Energy Management Planning Process. This will assure coordination between the ongoing activity and the planning process.

### Reason #2-Where the City has Little or No Control over the Implementation Decision

Although Boston is a home-rule city, there are several areas in which controls normally at the local level are the responsibility of State agencies. This is particularly true of the building code which is a uniform code for the State of Massachusetts. This was code modified January 1, 1978 to include a series of energy conserving standards for all new construction and for major existing buildings.

### Reason #3-To Take Advantage of the City's Existing Information and to Assure the Long term Usefulness of the Data Gathering Aspect of the Energy Audit.

The use of existing data and computers will allow us to define and deal with a larger number of (for example) housing types than is proposed in the methodology. A small but statistically significant number of actual cases representing various fuel types and levels of insulation would then be analyzed to determine fuel consumption and costs. Thus in addition to overall fuel consumption information, we will be developing data on savings associated with differing fuels and insulation levels. This information later can be used to analyze individual buildings and for "selling" energy conservation on the basis of realistic estimates of savings and pay back times.

In conjunction with this variation, we are investigating the use of computer graphic techniques at both the architectural and city wide level.

### Reason #4-Whenever Possible and Appropriate Cost figures will be Included in the Energy Audit

Energy costs are both a major part of Boston's energy problem and will figure into our implementation strategy. Bostonians are more likely to make full savings expenditure if they perceive the cost savings as well.





SECTION 7  
DELIVERABLES



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Deliverables will be provided as described in the RFP.



SECTION 8  
LETTERS OF SUPPORT





BOSTON EDISON COMPANY  
EXECUTIVE OFFICES  
800 BOYLSTON STREET  
BOSTON, MASSACHUSETTS 02199

THOMAS J. GALLIGAN, JR.  
PRESIDENT

June 12, 1978

The Honorable Kevin H. White  
Mayor of the City of Boston  
City Hall  
Boston, Massachusetts 02201

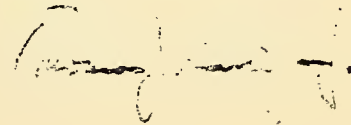
Dear Mayor White:

The Boston Edison Company would be pleased to cooperate with and participate in the Boston Redevelopment Authority's "Comprehensive Community Energy Management Program."

Having been involved in home energy audit programs and load management projects for the past several years, we, as an energy supplier, stand ready to assist you in carrying out your proposed objectives.

It is gratifying to see that your Administration is assuming a leadership and coordinating role in this very vital area of energy conservation, and we look forward to an early start on this project.

Very truly yours,





100 State Street  
Boston, Massachusetts 02108  
Telephone 671-2200

*Paul Hoen*

*Federal Relations*

RECEIVED

JUN 11 1978

MAYOR'S OFFICE

The Hon. Kevin H. White  
Mayor of Boston  
Office of the Mayor  
City Hall  
Boston, MA., 02108

June 9, 1978

Dear Mayor White:

In Mr. John J. Bacon's absence, your letter to him dated May 17, 1978, has been directed to my attention.

Boston Gas Company is pleased to offer its support for the City of Boston's application for Federal funding of a "Comprehensive Community Energy Management Program" as outlined in the Department of Energy's Request for Proposals, #78-4299, prepared by the Argonne National Laboratories.

Due to the as yet unspecified nature of the program and the relative uniqueness of the undertaking, the specifics of the City's proposal would require further study on our part before the exact nature of our participation could effectively be determined.

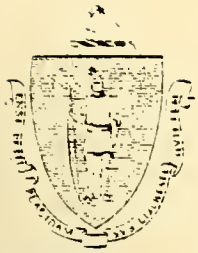
I'm delighted to see this continued expression of the City's interest in addressing the problems of efficient energy utilization and conservation.

I wish you success in your pursuit of the planning grant.

Very truly yours,

John T. McKenna  
Vice President

JTM/wha



THE COMMONWEALTH OF MASSACHUSETTS

EXECUTIVE DEPARTMENT

STATE HOUSE • BOSTON 02133

THOMAS P. O'NEILL III  
LIEUTENANT GOVERNOR

June 14, 1978

The Honorable Kevin H. White  
Mayor  
City of Boston  
City Hall  
Boston, Massachusetts

Dear Kevin:

I am writing to strongly endorse the City of Boston's grant application to the Department of Energy, Community Systems Branch, for its pilot program for the development of a Comprehensive Community Energy Management Program.

In my capacity as Federal/State liaison for the Commonwealth, I have been dealing with many of the energy issues that face our region and state. Consequently I am all too aware of the problems caused for our citizens and economic base by the present high cost of energy.

This proposal will address and hopefully, to some extent, alleviate this burden. Further, it coincides nicely with many of the initiatives instituted under your leadership by the city.

Lastly, the institution of such a program melds into the goals of the Boston Plan and President Carter's Urban Policy in terms of making urban areas viable, thriving centers once again.

If I can be of further assistance, please call.

Sincerely,

A handwritten signature in dark ink, appearing to be "TPO", written over a large, light-colored circular mark.

TPO/mfro

THOMAS P. O'NEILL III  
Lieutenant Governor



**NEW ENGLAND REGIONAL COMMISSION**

53 State Street-Suite 400  
Boston, Massachusetts 02109

OFFICE OF THE FEDERAL COCHAIRMAN

June 14, 1978

Mr. Robert P. Houghton  
Subcontract Administrator  
Argonne National Laboratories  
9700 South Cass Avenue  
Argonne, Illinois 60439

Dear Mr. Houghton:

The New England Regional Commission (NERCOM) has been asked by the City of Boston to provide a formal letter of support for the City of Boston's proposal to receive a two year planning grant under the Department of Energy's Comprehensive Community Energy Management Program.

NERCOM is a State-Federal partnership established under Title V of the Public Works and Economic Development Act of 1965. The Commission has three major program thrusts--transportation, economic development, and energy. The energy program serves as the nucleus to the New England states and their energy offices in the development of regional energy programs and as such is involved throughout the region in such areas as energy policy analysis, energy management information systems, low-income winterization programs, alternative energy resource development, and environmental impact analysis of energy development.

In this capacity the Commission is quite aware of the problems that communities are now facing with the increased cost of energy supplies and the need to develop plans to ensure that they can maintain some security of supplies during crises as well as to plan for their future economic growth given the uncertainty of traditional energy sources and the need to develop a new means of providing for their energy needs. We believe that your proposed concept of a "comprehensive community energy plan" is a good one and is needed. Furthermore, we are pleased to see that the city of Boston has taken the time and initiative to respond to your request for proposal by their submission. Boston is, as you are aware, the largest city in the region and would serve, in our judgement, to provide a good model for this type of program since it encompasses many of the problems found in other communities throughout the country. Because of Boston's key role as not only the most populous city in the region, but also as the center and symbol of regional/information dissemination, it would seem fitting for Boston to be included in any pilot project which may become the analytical base for future legislative efforts in support of community energy management.





June 14, 1978

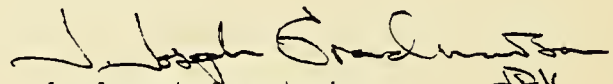
As mentioned in Part II, Section C of the Boston proposal--Organization to Prepare CCEMP Action Plan--NERCOM would be pleased to participate in a policy advisory group to the projected Boston CCEMP effort, and to coordinate with other CCEMP efforts in the region, should such be granted.

In terms of direct technical support, I should mention that several of the Commission's Energy Program Staff have consulted with the City and particularly the Boston Redevelopment Authority, focusing on the possible use of NEEMIS by the City in three areas of conservation/management.

1. Use of NEEMIS models regarding building analysis and/or consumption monitoring as well as possible use of the NEEMIS "residential energy forecast" model.
2. Sharing of data.
3. Technical assistance in procedural and methodological approaches to energy auditing and management.

In closing, let me re-emphasize the commitment of the New England Regional Commission to reduction of our national dependency on imported oil through the development of strong conservation/management capability on all levels of society. Our review of the Boston CCEMP proposal finds it to be a promising step in this direction and worthy of our support.

Sincerely,

  
J. Joseph Grandmaison  
Federal Cochairman

# THE SCHOOL COMMITTEE OF THE CITY OF BOSTON



BOSTON PUBLIC SCHOOLS  
OFFICE OF THE SUPERINTENDENT  
MARION J. FAHEY

May 31, 1978

The Honorable Kevin H. White  
Mayor of the City of Boston  
One City Hall Square  
Boston, Massachusetts 02201

Dear Mayor White:

This will acknowledge receipt of your correspondence of May 24, 1978, relative to a proposal being developed by the Boston Redevelopment Authority for the purpose of conducting a "Comprehensive Community Energy Management Program."

The purpose of this correspondence is to indicate support of the Boston School Committee and the Superintendent of Schools for the application and to offer our full cooperation and support of the development of a comprehensive energy management program planning effort. The Boston School Department is in a unique position to provide important data on energy use in various school buildings and to provide access to those buildings for engineering analysis and the implementation of management and conservation procedures. The Superintendent's office will assume responsibility for coordination and accomplishment of the tasks inherent in an energy management program.

It is the goal of the School Department to implement those policies and procedures necessary to enable operating personnel who do not have extensive technical training to organize, implement and sustain an ongoing energy-savings program. The office of the Chief Plant Engineer has served as the liaison between the School Department and other city, state and federal offices dealing with energy conservation issues. Mr. John Doherty, Chief Plant Engineer, and Mr. Joseph Madden of his staff may be reached at 26 Court Street, Boston, or by telephone at 726-6440.

We look forward to cooperating with you in this effort.

Sincerely,

Marion J. Fahey  
Superintendent of Public Schools

mc

cc: President and Members, Boston School Committee



**MASSACHUSETTS  
BAY  
TRANSPORTATION  
AUTHORITY**

Board of Directors  
50 High Street, Boston, Mass. 02110

May 30, 1978

**RECEIVED**

JUN 09 1978

**MAYOR'S OFFICE**

Honorable Kevin H. White  
Mayor of Boston  
City Hall  
Boston, Massachusetts

Dear Mayor White:

I am writing to you in response to your letter of May 17, 1978, regarding the Boston Redevelopment Authority proposal to the U. S. Department of Energy to conduct a "Comprehensive Community Energy Management Program."

I would like to take this opportunity to assure you of the Authority's interest in a joint development of energy programs with the City of Boston and to express our enthusiastic support for your efforts in obtaining a grant to develop energy conservation plans.

The MBTA by virtue of providing extensive public transportation services which are more energy efficient in comparison to present automobile travel should continue to play a major role in conserving energy within the Metropolitan area, especially within the City of Boston. This Authority recognizes the vital importance of making public transportation even more energy efficient and is anxious to continue working with the City of Boston in a cooperative development of energy conservation plans and programs.

As you know the Authority has been working with City of Boston officials in areas such as designation of exclusive bus lanes on city streets, and priority traffic control systems for transit vehicles along major arteries within the city as a part of our Federally funded (U.M.T.A.) Transit Efficiency Program. However, I am sure there are many additional areas which have not yet been explored wherein the Authority can conserve energy while also improving public transportation services.

Very truly yours,



Robert R. Kiley  
Chairman



Metropolitan Area Planning Council  
44 School Street Boston, Massachusetts 02108

Carla B. Johnston  
Executive Director

(617) 523-2454

June 14, 1978

The Honorable Kevin H. White  
Mayor, City of Boston  
City Hall  
Boston, Massachusetts

RE: "Comprehensive Community Energy Management Program"  
proposal as submitted by the Boston Redevelopment  
Authority

Dear Mayor White:

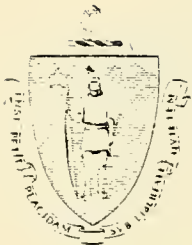
In accordance with the Office of Management and Budget Circular A-95, the Metropolitan Area Planning Council, as metropolitan clearinghouse, has reviewed the above referenced preapplication.

The MAPC finds this proposal consistent with regional goals as it conforms to MAPC policies encouraging greater housing opportunities for low and moderate income people through an energy audit and weatherization program. Additionally, this proposal encourages revitalization of Boston, an older urban center, through the promotion of energy related industries as part of a neighborhood economic revitalization effort.

Very truly yours,

Carla B. Johnston  
Executive Director

CBJ:lpb  
cc: Ms. Gail Rotegard  
MAPC Representative, Boston



THE COMMONWEALTH OF MASSACHUSETTS

EXECUTIVE DEPARTMENT

STATE HOUSE • BOSTON 02133

THOMAS P. O'NEILL III  
LIEUTENANT GOVERNOR

June 14, 1978

The Honorable Kevin H. White  
Mayor  
City of Boston  
City Hall  
Boston, Massachusetts

Dear Kevin:

I am writing to strongly endorse the City of Boston's grant application to the Department of Energy, Community Systems Branch, for its pilot program for the development of a Comprehensive Community Energy Management Program.

In my capacity as Federal/State liaison for the Commonwealth, I have been dealing with many of the energy issues that face our region and state. Consequently I am all too aware of the problems caused for our citizens and economic base by the present high cost of energy.

This proposal will address and hopefully, to some extent, alleviate this burden. Further, it coincides nicely with many of the initiatives instituted under your leadership by the city.

Lastly, the institution of such a program melds into the goals of the Boston Plan and President Carter's Urban Policy in terms of making urban areas viable, thriving centers once again.

If I can be of further assistance, please call.

Sincerely,

A handwritten signature in dark ink, appearing to be "TPO", enclosed within a large, loopy, handwritten oval.

TPO/mfro

THOMAS P. O'NEILL III  
Lieutenant Governor



99 HIGH ST. BOSTON, MASSACHUSETTS 02110 (617) 482-2930 TELEX 94 0365

June 6, 1978

RECEIVED

JUN 11 1978

Honorable Kevin H. White  
Mayor  
City of Boston  
City Hall  
Boston, MA 02202

MAYOR'S OFFICE

Dear Mayor White:

The Massachusetts Port Authority has reviewed your letter describing your grant request for a "Comprehensive Community Energy Management Program". Our organization is totally supportive of this proposal, and would like very much to work with the City on energy matters that concern us both.

The Port Authority for the past year has been involved in assessing opportunities for energy conservation with particular concern paid to the extraordinary petroleum dependence that we, as well as all users in the New England region, are bound by. Our airport and seaport operations are heavily energy intensive, and everything that we can do to identify means of reducing consumption will be helpful not only to us as an operating agency but for the users of our facilities. Benefits of any energy reduction will obviously rebound both to the City of Boston and to the general region which our facilities serve.

To the extent that we can work cooperatively with the City in a much larger scale energy conservation effort, these benefits can be multiplied. We look forward to hearing further from you on this project and wish you success with your proposal.

Sincerely,

Robert Weinberg  
Chairman

RW/CD/cr





*The Commonwealth of Massachusetts*  
*Consumers' Council*

*Leverett Saltonstall Building, Government Center*  
*100 Cambridge Street, Boston 02202*

DORIS R. POTE  
CHAIRMAN

RICHARD A. BORTEN  
EXECUTIVE SECRETARY

(617) 727-2605

June 13, 1978

Mr. Paul Horn  
Office of Federal Relations  
City Hall  
Boston, Massachusetts 02201

Dear Mr. Horn:

I am familiar with the proposal submitted by the Boston Redevelopment Authority to the United States Department of Energy for the funding of a Comprehensive Community Energy Management Program.

The proposal offers some imaginative approaches to the solution of the long and short run energy problems of Boston's neighborhoods. The Massachusetts Consumers' Council, like every consumer protection agency, has seen the effects of spiraling fuel costs on family budgets. The experience of the past two winters and evidence that the future energy outlook is not bright clearly argue for aggressive efforts to reduce household consumption of energy.

This office feels it can benefit from data derived from the Boston Redevelopment Authority proposal, and we will, of course, be happy to assist the city in the successful implementation of the Comprehensive Community Energy Management Program.

Sincerely,

Richard A. Borten  
Executive Secretary

mel



Action for Boston  
Community Development  
Inc. 150 TREMONT STREET, BOSTON, MASSACHUSETTS 02111  
TELEPHONE: AREA CODE (617) 357-6000

June 14, 1978

His Honor Kevin H. White, Mayor  
City of Boston  
Boston, Massachusetts

Dear Mayor White:

Action for Boston Community Development, Inc. looks forward to participating in the planning and implementation of the City of Boston's "Comprehensive Community Energy Management Program."

As you are aware, Action for Boston Community Development for the past several years has been developing and sponsoring numerous energy conservation programs throughout the City targeted at reducing the energy consumption and accompanying high costs borne by the low-income population of the City. Our experience in projects such as the ABCD Weatherization program in which over 700 homes have been insulated and the Energy Conservation Community Education program has dramatically illustrated the need for comprehensive planning on the local level in the area of energy management.

We therefore support the efforts of the City of Boston to institute a comprehensive energy planning process and look forward to working with the City on this matter of mutual concern.

Sincerely,

Robert M. Coard, Executive Director

RMC:km





service for energy conservation in architecture  
boston architectural center / 320 newbury street / boston, mass., 02115

INDUSTRY STEERING COMMITTEE

ROBERT JOYCE  
Masonry Institute of  
Mass. and New Hampshire  
Chairman

RICK STOUT  
Russell Energy  
Vice-Chairman

ERNEST R. HAYES, JR. CSI  
Engineering Catalog Service  
Secretary/Treasurer

LEW BOYD  
Solar Solutions, Inc.  
Liaison

JAMES R. ADAMS  
Charlestown Development Corp.

CARMELO AGOSTINO  
Fitzmeyer and Tocci, Inc.

MARK CAPLAN  
Xenergy, Inc.

DALE CRONAN  
Boston Edison Co.

ARTHUR DUFFY  
Boston Five-Cent Savings

RAND ENGEL  
Home Energy Centers, Inc.

HERBERT GLASSMAN, AIA  
Perley F. Gilbert Assoc.

STANLEY S. KOLODKIN  
Xenergy Inc.

JACK LEONHARDT  
Leonhardt Co. Inc.

JEDEDIAH MANNIS  
Attorney at Law

GEORGE MATTSON  
Solar Components Inc.

ROBERT A. MCSHERRY  
Mass. Plumbing, Heating  
Cooling Contractors

JAMES C. OSER  
James Oser Assoc.

CHARLES PESKO  
Rapco Foam Distributors Corp.

PAUL PIMENTEL  
Energystics

JOHN SCALDINI, JR.  
Scaldini Inc.

ROBERT SLATER  
Slater Publications, Inc.

DICK SPAULDING  
Spaulding Brick Co., Inc.

CLARK SPENCER  
Spencer Sales Co.

Marc Older  
Deputy Director, Comprehensive Planning  
City of Boston  
BRA  
9th Floor/City Hall  
Government Center  
Boston, MA

13 June 1978

Dear Marc:

On behalf of SECA, I am writing in general support of your CCEMP Grant Application. In reviewing the details of your proposal, we have come to the belief that Energy Management represents the number one priority for the city's principle planning agency. The subject application supports this view with a program of action--and order.

Ultimately, people-not programs-save energy, with direct energy-conscious processes. The logic of this has a main or "visible" focus on residential situations. Our work 2 years ago-in running the RED ROVER Program for the Mass Energy Policy Office(Infrared photo survey-for heat loss)is such an example of the "visible" focus.

Machine aids(computer-assisted auditing/survey programs) have begun to come into their own recently. Next wednesday, 21 June 1978-at the Boston Architectural Center, we will be conducting a so-called second generation Computer Conference focusing on energy programs in architectural applications. With the generous help of the Control Data Corp. we will review-with the design professions-the possibilities for savings...and surer designs for future construction.

The fact that one out of ten Bostonians live in a BHA project underscores the need for management competence in this important, "problem housing" area. We have recently-working with both BHA and the HUD Regional Office-developed an approach to energy management which we call THE INCENTIVES PROGRAM. As you are already aware of this activity, you might be interested to know that both the BHA Tennant Policy Council-and the Welfare Research Corp. of Albany, N.Y.-are actively investigating this simple but potentially useful approach to energy conservation management.

Our own grant application in the hydro-potential area-with the City of Lowell-directly involved the local community and the school department. There was an educational element to this effort, and perhaps I will stop there. To learn what to do must be followed with HOW TO DO IT, and the



service for energy conservation in architecture  
boston architectural center / 320 newbury street / boston, mass., 02115

managing of the doing. Your proposal begins to get to this latter need, and therefore SECA enthusiastically supports your effort.

If we can be of further assistance with respect to this activity, please let us know. Otherwise, see you at the next SECA Industry Steering Committee meeting.

Regards

A handwritten signature in black ink, which appears to read 'Don R. Brown', is written below the 'Regards' text.

Don R. Brown/Professional Advisor-SECA Program

# Michael McClintock and Associates

---

162 Commercial Street, Boston, Massachusetts 02109, / (617) 723-8249

June 12, 1978

Mr. Robert P. Houghton  
Sub Contract Administrator  
Argonne National Laboratories  
9700 Cass Avenue  
Argonne, Illinois 60439

Dear Mr. Houghton,

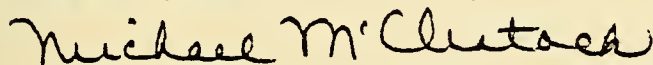
This letter is written in support of the application of the City of Boston for funds to conduct a comprehensive and vital community energy management program.

This organization stands ready to participate and support in any way possible such a program in the event that funds are granted for its conduct.

This organization, although recently formed, consists of experts in the energy use field and have completed several projects recognized as being advances in the field of solar energy. One project, on the economics of energy conservation strategy, is enclosed with this letter to illustrate our capability in this timely field.

We urge your favorable consideration of the City of Boston's application for funds in the interest of conducting a pilot program to illustrate to other cities in the nation what can be accomplished by a well organized and carefully thought out approach to the wise and efficient use of energy.

Sincerely yours,



Michael McClintock  
President

MM/em  
enclosure



## SECTION 9

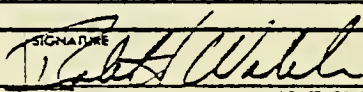
BUDGET AND CONTRACT PRICING PROPOSAL (FORM 59)





CONTRACT PRICING PROPOSAL				Office of Management and Budget Approval No. 29-RO183	
This form is for use when submission of cost or pricing data (see FPR 1-3.80*-3) is required.				PAGE NO.	NO. OF PAGES
NAME OF OFFEROR		SUPPLIES AND/OR SERVICES TO BE FURNISHED			
Boston Redevelopment Authority		Comprehensive Energy Plan			
HOME OFFICE ADDRESS		QUANTITY		TOTAL AMOUNT OF PROPOSAL	
Boston City Hall Boston, MA 02201		1		\$ 408,625	
DIVISION(S) AND LOCATION(S) WHERE WORK IS TO BE PERFORMED		GOVT SOLICITATION NO.			
same				78-4299	
COST ELEMENTS		PROPOSED CONTRACT ESTIMATE			
		TOTAL COST *	UNIT COST *	REFERENCE	
1. DIRECT MATERIAL *	a. PURCHASED PARTS *				
	b. SUBCONTRACTED ITEMS **	**SEE ATTACHED BUDGET**			
	(1) RAW MATERIAL *				
	(2) STANDARD COMMERCIAL ITEMS *				
c. INTERDIVISIONAL TRANSFERS (at other than cost) *					
2. MATERIAL OVERHEAD **					
3. INTERDIVISIONAL TRANSFERS AT COST **					
4. DIRECT ENGINEERING LABOR **					
5. ENGINEERING OVERHEAD **					
6. DIRECT MANUFACTURING LABOR **					
7. MANUFACTURING OVERHEAD **					
8. OTHER COSTS **					
9. SUBTOTALS					
10. GENERAL AND ADMINISTRATIVE EXPENSES **					
11. ROYALTIES **					
12. FEDERAL EXCISE TAX **					
13. SUBTOTALS					
14. PROFIT OR FEE					
15. TOTAL PRICE (Amount)					
I. HAS ANY EXECUTIVE AGENCY OF THE UNITED STATES GOVERNMENT PERFORMED ANY REVIEW OF YOUR ACCOUNTS OR RECORDS IN CONNECTION WITH ANY OTHER GOVERNMENT PRIME CONTRACT OR SUBCONTRACT WITHIN THE PAST TWELVE MONTHS? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO (If yes, identify below)					
NAME AND ADDRESS OF REVIEWING OFFICE AND INDIVIDUAL				TELEPHONE NUMBER/EXTENSION	
Inspector General, Dept. Housing and Urban Development					
II. WILL YOU REQUIRE THE USE OF ANY GOVERNMENT PROPERTY IN THE PERFORMANCE OF THIS PROPOSED CONTRACT? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO (If yes, identify on reverse or separate page)					
III. DO YOU REQUIRE GOVERNMENT CONTRACT FINANCING TO PERFORM THIS PROPOSED CONTRACT? <input type="checkbox"/> YES <input type="checkbox"/> NO (If yes, identify) <input type="checkbox"/> ADVANCE PAYMENTS <input checked="" type="checkbox"/> PROGRESS PAYMENTS OR <input type="checkbox"/> GUARANTEED LOANS					



IV HAVE YOU BEEN AWARDED ANY CONTRACTS OR SUBCONTRACTS FOR SIMILAR ITEMS WITHIN THE PAST THREE YEARS? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO (If yes, show customer(s) and contract numbers on reverse or a separate page)	
V DOES THIS COST SUMMARY CONFORM WITH THE COST PRINCIPLES APPLICABLE TO YOUR CONTRACT? <input type="checkbox"/> YES <input type="checkbox"/> NO (If no, explain on reverse or separate page)	
This proposal is submitted for use in connection with and in response to <u>RFQ 78-4220</u>	
_____ "and reflects our best estimates as of this date."	
in accordance with the Instructions to Offerors and the Footnotes which follow.	
*Describe RFQ, etc.	
TYPED NAME AND TITLE <b>Robert Walsh, Director.</b>	SIGNATURE 
NAME OF FIRM <b>Boston Redevelopment Authority</b>	DATE OF SUBMISSION <b>June 14, 1978</b>

FOOTNOTES

**NOTE 1.** Enter in this column those necessary and reasonable costs which in the judgment of the offeror will properly be incurred in the efficient performance of the contract. When any of the costs in this column have already been incurred (e.g., in a letter contract or change order), describe them on an attached supporting schedule. When "pre-production" or "startup" costs are significant or when specifically requested in detail by the contracting officer, provide a full identification and explanation of same. Identify all sales and transfers between your plants, divisions, or organizations under a common control, which are included at other than the lower of cost to the original transferor or current market price.

**NOTE 2.** The use of this column is optional for multiple line item proposals, except where the contracting officer determines that a separate Optional Form 59 is required for selected line items.

**NOTE 3.** Attach separate pages as necessary and identify in this column the attachment in which the information supporting the specific cost element may be found. No standard format is prescribed; however, the cost or pricing data must be accurate, complete and current, and the judgment factors used in projecting from the data to the estimates must be stated in sufficient detail to enable the Contracting Officer to evaluate the proposal. For example, provide the basis used for pricing the bill of materials such as by vendor quotations, shop estimates, or invoice prices; the reason for use of overhead rates which depart significantly from experienced rates (reduced volume, a planned major rearrangement, etc.); or justification for an increase in labor rates (anticipated wage and salary increases, etc.). Identify and explain any contingencies which are included in the proposed price, such as anticipated costs of rejects and defective work, anticipated costs of engineering redesign and retesting, or anticipated technical difficulties in designing high-risk components.

**NOTE 4.** Provide a list of principal items within each category of material indicating known or anticipated source, quantity, unit price, competition obtained, and basis of establishing source and reasonableness of cost.

**NOTE 5.** Include material for the proposed contract other than material described in the other footnotes under the cost element entitled "Direct Material."

**NOTE 6.** Include parts, components, assemblies, and services to be produced or performed by other than you in accordance with your designs, specifications, or directions and applicable only to the prime contract.

**NOTE 7.** Include raw and processed material for the proposed contract in a form or state which requires further processing.

**NOTE 8.** Include standard commercial items normally fabricated in whole or in part by you which are generally stocked in inventory. Provide explanation for inclusion at other than the lower of cost or current market price.

**NOTE 9.** Include all materials sold or transferred between your plants, divisions or organizations under a common control at other than cost to the original transferor and provide explanation of pricing method used.

**NOTE 10.** Indicate the rates used and provide an appropriate explanation. Where agreement has been reached with Government representatives on the use of forward pricing rates, describe the nature of the agreement. Provide the method of computation and application of your overhead expense, including cost breakdown, and showing trends and budgetary data as necessary to provide a basis for evaluation of the reasonableness of proposed rates.

**NOTE 11.** Include separate breakdown of costs.

**NOTE 12.** Provide a separate breakdown of labor by job category and furnish basis for cost estimates.

**NOTE 13.** Include all other estimated costs (e.g., special tooling, facilities, special test equipment, special plant rearrangement, preservation packaging and packing, postage and reward, and warranty) which are not otherwise included. Identify separately each category of cost and provide supporting details. If the proposal is based on a F.O.B. destination price, indicate separately all outbound transportation costs included in total amount.

**NOTE 14.** If the total cost entered here is in excess of \$250, provide on a separate page the following information on each separate item of royalty or license fee: name and address of licensor; date of license agreement; patent numbers, patent application serial numbers, or other basis on which the royalty is payable; brief description, including any part or model numbers of each contract item or component on which the royalty is payable; percentage or dollar rate of royalty per unit; unit price of contract item; number of units; and total dollar amount of royalties. In addition, if specifically requested by the contracting officer, a copy of the current license agreement and identification of applicable claims of specific patents shall be provided.

**NOTE 15.** Selling price must include any applicable Federal excise tax on finished articles.

TWO YEAR BUDGET  
FOR  
A  
COMPREHENSIVE COMMUNITY ENERGY  
MANAGEMENT PROGRAM

DIRECT PERSONAL SERVICES

Position	% Time Project	Annual Pay Rate	Total Project	Funding Source	
				Dept. of Energy	Boston
Dir./Comprehensive Plng.	10	28,000	5,600		5,600
Project Director(1)	100	\$22,000	\$ 44,000	\$ 22,000	\$22,000
Energy Specialist(1)	100	16,000	32,000	32,000	0
Energy Specialist(1)	100	14,000	28,000	28,000	0
Planner(1)	50	22,000	22,000	11,000	11,000
Planner(2)	50	16,000	32,000	16,000	16,000
Public Info. Spec.(1)	35	15,000	10,000	10,000	0
Systems Analyst(1)	100	14,000	28,000	28,000	0
Planning Asst.(1)	100	12,000	24,000	24,000	0
Secretary	100	10,000	20,000	20,000	0
CETA Staff(6) (no charge to project est. value of \$60,000)					
SUBTOTALS			\$245,600	\$191,000	\$54,600
<u>Fringe Benefits</u> 23% of base pay			56,500	43,900	12,600
TOTAL DIRECT PERSONAL SERVICES			\$302,100	\$324,900	\$67,200

CONTRACTUAL SERVICES

Telephone (indirect charge)	\$ 0	\$ 0	\$ 0
Office Space (indirect charge)	0	0	0
Travel	6,000	6,000	0
Printing & Reproduction	9,000	9,000	0
Workshops & Forums	7,500	7,500	0
Public Information	4,000	4,000	0
Computer Costs	80,000	40,000	40,000
Msc. Contractual Services	5,000	5,000	0
Equipment Rental	3,000	3,000	0
TOTAL CONTRACTUAL SERVICES	\$108,500	\$ 68,500	\$40,000

SUPPLIES AND MATERIALS

Postage	\$ 3,000	\$ 3,000	0
Office Supplies (indirect charge)	0	0	0
Graphic Supplies	2,500	2,500	0
TOTAL SUPPLIES AND MATERIALS	\$ 5,500	\$ 5,500	0

# INDIRECT COSTS

Indirect cost is based on Federal policy for indirect allocation and BRA indirect cost rate of 25% of direct cost:

	Total Project	Funding Source Dept. of Energy	Boston
25% of direct cost:	\$126,525	\$ 99,725	\$ 26,800
TOTAL INDIRECT COST	\$126,525	\$ 99,725	\$ 26,800

## BUDGET TOTAL

Total Direct Personal Services	\$302,100	\$234,900	\$ 67,200
Total Contractual Services	108,500	68,500	49,000
Total Supplies and Materials	5,500	5,500	0
Total Indirect Cost	126,525	99,725	26,800
GRAND TOTAL	<u>\$542,625</u>	<u>\$408,625</u>	<u>\$134,000</u>

TOTAL CONTRACT REQUEST TO ARGONNE: \$408,625

## Appendix #1

### Public and Private Groups Involved in Energy Planning, Management, and Research

#### A. Federal

##### 1. Department of Energy

Region One office established by the Federal Energy Administration in 1973.

##### 2. New England Regional Commission (NERCOM)

A federal-state planning organization operated by the Department of Commerce and the six New England States. It is directed by the six New England governors, and federal co-chairmen appointed by President Carter. NERCOM's energy program is divided into ten areas.

Energy Policy Analysis - analyze the rapid developments in national energy planning and the increasing demands to be placed upon the States and representative regional entities in the planning process.

OCS/Pipeline Issues - represents the interest of the region as a whole on questions of leasing and drilling.

Regional Regulatory Assistance - coordinated program for emergency energy planning and activities involving energy utilities.

New England Energy Management Information System - develop a regional energy data base with management and forecasting capability to determine economic and social effects of changes in the regional energy situation and to allow the States to formulate a response and take action.

Strategic/Regional Petroleum Reserve - develop recommendations for a regional petroleum reserve in the northeast to ensure that sufficient supply to satisfy the needs of the region in case there will be interruption.

Alternative/Renewable Energy Resources Program - development of reliable information for the utilization of these resources.

Environmental/Energy Resource and Research Assistance - coordination of environmental and energy resources to promote the economic growth of New England.



### 3. Northeast Solar Energy Center

One of four Regional Centers formed by the Department of Energy to foster the widespread commercialization of solar energy. The principal objectives of the center are:

1. To reduce the regional dependence on oil, especially foreign oil, and gas.
2. To use the natural resources of the region for energy needs, including biomass from forests and farms, wind energy, and ocean energy.
3. To engage the institutional resources of the region-governmental, intellectual, financial, and industrial - in the solution of the problem.
4. To develop incentives to eliminate the barriers to solar energy applications.
5. To achieve widespread use of solar hot water heating in the region.
6. To assist in the development of solar space heating or hybrid solar systems that can cope with the Northeast winters.
7. To identify industrial and agricultural activities, especially for process heat, in which energy efficiency can be enhanced with solar energy.
8. To achieve continued widespread implementation of emerging solar technologies as they become economically feasible.

### B. Regional

#### 1. New England Energy Congress

Sponsored by the New England Congressional Caucus and Tufts University; Co-chairmen are United States Representatives, Silvio Conte and Edward Bolland. The 120 delegates that make up the Congress represent manufacturing; small business; state, local, and federal government; public and private utilities; academia, consumer groups, and fuel suppliers. This Congress will seek to design a "Blueprint for New England Energy Action" and will advise elected officials from New England on energy policy.

#### 2. Service for Energy Conservation in Architecture (SECA)

A non-profit organization within the Boston Architectural Center. SECA's goal is to promote measurable energy savings in architectural applications. This evaluative/educational

service to the building-related industries is sponsored by these industries.

C. Massachusetts

1. Massachusetts Energy Policy Office (MEPO)

State agency established by the governor in July 1974 to assist the governor, state congressional delegation, and state legislature with energy policy decisions. Its main programs include public information and education; program and policy development; and an energy conservation extension service. Within the Massachusetts Energy Policy Office are the Solar Action Office (established in 1977) and the Energy Facilities Siting Council. The Solar Action Office serves as a clearing house for solar information, distributes federal funds for solar development, and promotes legislation to overcome obstacles to solar development. The Energy Facilities Siting Council reviews the need and possible locations for new energy facilities in Massachusetts.

2. Massachusetts Fair Share

Consumer group supported by donations. Fair Share is an advocate on many issues affecting consumer interests. In 1976 Fair Share was responsible for making flat rate electricity pricing a referendum question. The group is very active in regulatory hearings.

Other issues in which Fair Share is an advocate include returnable bottles, real estate tax reform, gun control, tenant rights, and auto insurance reform.

3. Metropolitan Area Planning Council (MAPC)

The Metropolitan Area Planning Council represents the chief elected officials of the 101 local governments and the more than 3 million citizens living in the metropolitan Boston region. Established in 1963 by the Massachusetts Legislature to respond to the need for a regional perspective, MAPC's responsibilities range from comprehensive land use planning and public investment strategy planning to technical assistance at the project level to local officials.

D. Boston

1. The Boston Energy Office (BEO)

The Boston Energy Office was conceived in 1975 as an experiment in using the resources of the academic community and State and Federal government to aid the City of Boston with energy management programs. The office was originally staffed by students and was independently funded as an attachment to the Boston Air Pollution Control Commission.

In 1976 the Energy Office became part of the Boston Consumers' Council. The office is now staffed by a director, deputy director and five CETA energy analysts. All City operating departments have appointed coordinators to work with the BEO to assess energy use and to implement energy conservation procedures.

The Energy Office has the following projects underway:

ENERGY AUDITS OF CITY BUILDINGS - The staff energy analysts have studied the lighting, maintenance scheduling, and general condition of City buildings and suggested appropriate no-cost and low-cost conservation measures.

PURCHASE POLICY - Introduced life-cycle costing to City purchase policy.

MOTOR VEHICLE POLICY - Reduced the number of municipal vehicles, introduced purchase policy for smaller cars, required monthly statements from all departments on number of vehicles being used.

ENERGY CONSUMPTION MONITORING SYSTEM - Working with the City's Data Processing Division and Boston Edison, the Energy Office receives monthly computer printouts of all municipal electricity consumption. This system will soon be expanded to include oil and natural gas.

SHARED SAVINGS INCENTIVE PROGRAM - School Headmasters will submit conservation plans for review by the Energy Office. Each school that reduces energy consumption over the previous fiscal year will be awarded a portion of the money saved.

ELDERLY PROJECT - The BEO worked with the City of Boston Commission on Affairs of the Elderly in educating the elderly in low cost energy conservation measures that could provide both greater in-home comfort and lower fuel bills.

## 2. Boston Redevelopment Authority (BRA)

### ORGANIZATION

The Boston Redevelopment Authority (BRA) has sole responsibility for urban renewal and planning activities in the City of Boston. It is a semi-autonomous body consisting of five board members. Four members are appointed by the Mayor, with City Council approval and one is appointed by the Governor of Massachusetts.



## PLANNING ACTIVITIES

As the city's planning agency, the BRA is responsible for city-wide comprehensive planning, neighborhood planning, urban renewal planning, transportation planning, historic preservation planning, and zoning.

The Planning Department has undertaken city-wide studies of housing, open space and recreation, industrial development, and institutional expansion, as well as broad transportation policy as it relates to land use and community development. In cooperation with other BRA departments, the staff is preparing studies relating to the new Comprehensive Plan for Boston.

The Neighborhood Planning Program provides planning services to Boston's neighborhoods by developing, with extensive community participation, a comprehensive planning program for each of the fifteen planning districts which are divided along traditional neighborhood boundaries. A district planner assigned to each district serves as a resource person to neighborhood groups, making available technical assistance when it is requested. All sections of the city have received planning assistance from the program.

The Transportation Planning section carries out planning studies pertaining to traffic, parking, public transportation and city transportation issues. In addition, Transportation Planning provides technical assistance to the city's Traffic and Parking Department.

The Zoning staff prepares and reviews amendments to the Zoning Code and Zoning Maps for consideration by the Zoning Commission and makes recommendations on petitions for conditional use permits, variances and exceptions to the Code that go before the Board of Appeal. In addition, the Zoning staff coordinates BRA activities pertaining to Planned Development Areas (PDA), a special zoning designation available to developments of one acre or larger.

## RESEARCH

A major adjunct to the BRA's planning capabilities is the Research Department, established to evaluate the economic impact of public and private proposals on the city and to formulate programs of action for the future. The early focus centered on information useful for planning, including studies on population and income, the city's expanding economy, and property values before and after renewal in several project areas, plus analyses of data from the 1970 Federal Census of Population and Housing. Information management systems have been established for the planning and development activities of the BRA. Strategies are now being formulated for fiscal planning, housing and community development,

economic and manpower development, and population and income goals for the city.

3. HOUSING IMPROVEMENT PROGRAM:

The Housing Improvement Program (HIP), funded from the Community Development Block Grant, was established in May, 1975. The HIP was designed to preserve and improve the neighborhoods of Boston by providing incentives for the rehabilitation of the owner-occupied housing stock of the City.

Incentives offered to homeowners include technical counseling in financing, construction and consumer protection, exemption from property tax reassessment for eligible improvements, plus a 20% cash rebate (50% in some areas on specific improvements, including heating systems). In general, eligible improvements are those related to code compliance, the preservation of the structure, energy conservation and repair or replacement of structural elements and basic systems.

"Sweat equity" is encouraged, as the rebate amount is based on the value of the improvements, not on the out-of-pocket to the homeowner.

Whether or not a homeowner is eligible for a rebate, he/she receives informal or formal counseling in all matters relating to financing and construction of intended home repairs. To date, the HIP has processed approximately 13,000 cases.

The program is operated from eleven neighborhood offices. Each site office is staffed by a Neighborhood Manager, a Principal Rehabilitation Specialist, several Rehabilitation Specialists, one or more Finance Specialists and a Clerk.

4. ACTION FOR BOSTON COMMUNITY DEVELOPMENT (ABCD)

Boston's primary federally funded anti-poverty agency. Includes a central office and field offices in Boston neighborhoods. ABCD is operating the following energy programs.

1. The Weatherization Project - provides employment and skill training in home weatherization technology to previously unemployed, unskilled residents of Boston and performs home repairs and energy saving improvements in reducing low income households in Boston.
2. The Self-Help Weatherization Project - will provide materials and installation instructions to approximately 1,000 low income households in Boston so that residents may perform weatherization repairs to their own homes.
3. Solar Energy Project - ABCD, in conjunction with the Jamaica Plain Area Planning Action Council, is providing maximum weatherization repairs and installing a solar

space heating system in a number of homes of low income families to demonstrate, on a pilot basis, the feasibility and value of the use of solar energy for space heating by low income persons.

4. Alternate Energy Project - ABCD will be offering workshops on building solar window box collectors and will be providing materials and instructions to at least 200 low income households in Boston so that residents may construct and install the collectors themselves.
5. The ABCD Energy Conservation Wagon - A walk-in van which contained educational materials and displays showing weatherization repairs.
6. Heating Bill Assistance Programs - Provides payment of overdue heating bills and provision of oil during the severest weather for many households whose oil tanks were empty and who could not afford to purchase oil. Approximately 8,000 people have received direct assistance through these programs.
7. Advocacy - ABCD has developed close working relationships with state, federal, profit and non-profit organizations to maintain and develop on-going support, information, and advocacy programs in energy-related matters for the residents of Boston.

#### E. College and University Groups

Within most of the colleges and universities in the Boston area, various groups to study energy issues have been formed. The following is a list of the formal organizations.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY ENERGY LAB  
David C. White, Director

BOSTON UNIVERSITY CENTER FOR ENERGY STUDIES  
Michael McClintock, Director

HARVARD UNIVERSITY ENERGY AND ENVIRONMENTAL POLICY  
CENTER  
Richard Wilson, Director

UNIVERSITY OF MASSACHUSETTS SURVEY RESEARCH PROJECT  
Floyd J. Fowler Jr., Director

UNIVERSITY OF MASSACHUSETTS BOSTON URBAN OBSERVATORY  
Joseph Slavett, Director





